AMENDMENTS TO THE SPECIFICATION:

Please replace the paragraph beginning on page 13, line 10 with the following amended paragraph:

More specifically, the system of the present invention can provide service information based on a boundary crossing determination as opposed to, for example, a binary determination that a mobile unit is either inside or outside a service zone at a particular instant in time. This is illustrated in Figure 2. In Figure 2, the location of a mobile unit is indicated by a point, e.g., defined by two-dimensional coordinates, and an uncertainty area ~~102~~ 202. In the illustrated implementation, the uncertain area is taken to be defined by an uncertainty radius surrounding the point 200, but it should be appreciated that uncertainty areas of other shapes may be utilized. In Figure 2, a current location of a mobile unit is shown in ~~solid~~ dashed lines and a prior location of the mobile unit is shown in ~~dashed~~ solid lines. The presumed movement of the mobile unit between the two times is therefore indicated by arrow 206.

Please replace the paragraph beginning on page 13, line 20 with the following amended paragraph:

Figure 2 illustrates activity that may be characterized as a boundary crossing. In particular, reference numeral 204 indicates a service zone boundary. In this case, the boundary 204 defines a service zone of complex shape as may be desired in a particular application. At the first time, the location of the mobile unit as indicated by the point ~~200~~ 200a and the uncertainty area ~~202~~ 202a is fully located on a first side of the boundary 204. At the second time, the location of the mobile unit as indicated by the point ~~200~~ 200b and the uncertainty area ~~202~~ 202b is undetermined with respect to the boundary 204. That is, a portion of the uncertainty area ~~202~~ 202b at the second time overlaps a portion of the service zone. Accordingly, the mobile unit may be within the service zone. This change in status from the first time to the second time (i.e., from "outside" the service zone to "potentially inside") may be deemed a boundary crossing event for the purposes of a particular application. It will be appreciated that a boundary crossing event may similarly be indicated by a change in status from clearly outside

the service zone to clearly inside the service zone, i.e. where the entire uncertainty area at the second time is within the service zone.

Please replace the paragraph beginning on page 14, line 10 with the following amended paragraph:

The example of Figure 2 suggests one mathematical analysis for identifying a boundary crossing event. Specifically, a change in status between the first time and the second time is determined relative to an overlapping area analysis. At the first time, the area of overlap between the uncertainty area ~~202~~ 202a and the service zone is a mathematical nullity. At the second time, there is an intersection between a set of area units comprising the uncertainty area ~~202~~ 202b and the set of area units comprising the service zone. For example, the area units may be elements of a Quadtree data structure utilized to represent the area of a wireless network such as described in co-pending United States patent application Serial No. 09/788,036 which is incorporated herein by reference in its entirety.

Please replace the paragraph beginning on page 14, line 19 with the following amended paragraph:

It will be appreciated that a variety of other mathematical models may be utilized in accordance with the present invention to identify a boundary crossing relative to first and second location information. For example, a first mathematical representation may be defined to represent a line segment or other geometric element interconnecting the first point ~~200~~ 200a (associated with the first time) and the second point ~~200~~ 200b (associated with the second time) or the first area ~~202~~ 202a and the second area ~~202~~ 202b and a second mathematical representation may be utilized to define the boundary 204. These mathematical representations may then be compared e.g., by simultaneously solving equations, to identify any intersection. Alternatively, a ray may be defined emanating from the point ~~200~~ 200a at the first time in a selected direction. Another ray may be defined emanating from the point ~~200~~ 200b at the second time in the same or a different direction. At each time, the number of instances that the ray

crosses the boundary 204 may be determined to thereby provide an indication that the point under consideration is inside or outside of the service area. Any change in status in this regard between the first time and the second time would be indicative of a boundary crossing. Many other solutions are possible as will be appreciated as one skilled in the art.